T. (*Allantus*) *arcuata*, Först.—Fairly common on umbelliferous plants in August.

T. (*Allantus*) *amoenus*, Grav. (=*cingulum*, C.).—Apparently very rare. Have only taken the ♂.

Tenthredella temula, Scop. (=*bicincta*, F.).—Not rare.

Tenthredella olivacea, Htg.—The commonest species of the genus here.

Tenthredella mesomelas, L.—Wreay, 1921.

Tenthredella colon, Kl.—Have only taken a ♀ here.

Tenthredella atra, L.—Have only taken var. *dispar*, Klug. myself although Mr. G. B. Routledge told me he had taken the type form.

Tenthredella moniliata, Kl.—Not uncommonly met with.

Tenthredella livida, L.— Came across this on several occasions in 1921-1923, but have not seen it since.

Tenthredella balteata, Kl.—Somewhat scarce, in my experience.

Tenthredopsis literata, Geoff.—Have only one ♂ but the two ♀ forms var. *cordata*, Geoff. and var. *femoralis*, C. appear to be fairly common.

Tenthredopsis coquerbertii, Kl., *T. thornleyi*, Kn., *T. inornata*. Cam., and *T. tristis*, Steph., are none of them scarce.

Scope for our Orthopterists.

By MALCOLM BURR, D.Sc., F.R.E.S.

It is about a century since an unquestioned addition has been made to our meagre list of indigenous Orthoptera. Including one or two questionable cases, we cannot claim more than 30 species, to which we may add 5 earwigs. In France north of Paris there are just about double as many, one or two of which may be with us, and even little Holland has over 50.

But even if we do not add any species, we may at least know somethis more about the distribution of those we have got. If we take a line from the mouth of the Severn to the Wash, there are out of the 35 only 18 species recorded. Eleven of our species are recorded only south of a line joining the Severn and the Thames estuaries.

For Wales I can find records of 15 species, of Ireland 11, of the Isle of Man 4, and of Scotland only 11, of which one or two are doubtful.

No Blattids yet from Ireland or Scotland; no crickets from Wales; of our 10 *Tettigonidae* Scotland has but one little "ewe lamb," a single specimen—storm-bound specimen—of *L. punctatissima* from the extreme south-west. I am sure there are several species in Scotland, but they require looking for. Ireland has 2.

Much of our ignorance is due not to poverty, but to neglect of the few things we have got. I am convinced that that meagre 18 from north of the Severn-Wash line could be substantially increased. Even in our relatively rich and well-worked south, some of the most characteristic species have not yet been recorded from Somerset and Wiltshire.

I have recently been plotting on the map our known distribution of the Orthoptera, and find that those two counties are usually white islands in a sea of pink. That reproach should be removed in the coming season. *M. grossus*, *G. rufus*, *St. lineatus*, *Ch. albomarginatus*

and *Acrydium subulatum*, will most probably be turned up there, and *Myrmeleotettix maculatus*, which colours my map like a chessboard from Land's End to John O'Groats, is not on my list for Wilts. Bedfordshire has an unworthy list, apparently without records of most of our commonest species. Stafford and Warwick are a little better, but in most of my maps, that eastern-midland region is generally white, chiefly due, I suppose, to the terrible condition of two counties, of which I cannot find a single record of Orthoptera. Those two counties will, I hope, remove the reproach this coming season. They are Worcester and Salop.

Here are some suggested lines of research, enough to satisfy anybody.

Dermaptera.

Is *Labidura riparia*, Pall. extinct at Pokesdown? Does not it occur further west along the south coast, and in Ireland? It should be looked for under dry seaweed and rubbish above highwater mark, on pale sand.

Labia minor, L. seems to have been reported from most parts of England, but I have no records from Wales (except Glamorgan), or on a line from Dorset to the Wash; none from central Ireland, and very few from Scotland or north western England.

Forficula auricularia, L. What is its northern limit? Is it all over Ireland? What is the distribution of the macrolabious form? Cannot anybody find any more brachypterous specimens?

Forficula lesnei, Fin. has not been recorded north of a line drawn approximately from the mouth of the Severn to the south of Suffolk. It probably ranges north and west. Is it in Ireland? It *must* be, in the south-west.

Apterygida albipennis, Meg. has been reported only from the east coast, from Kent to Suffolk. It is usually associated with hops. Is it in Herefordshire?

Earwigs are adult from late July, and hibernate, so that adults may be found almost all the year, though by the next June the last generation are probably extinct and the young one hardly full grown.

Dictyoptera.

Ectobius lapponicus, L. ought to be reported from many more of our southern counties. I have no records north of the Thames, but it is pretty sure to be there. None from Ireland. Described from Lapland.

Ectobius pallidus, Steph. or *lividus*, Fabr. or *perspicillaris*, Herbst. is known from Kent to Cornwall and also Glamorgan; its range may well extend further north than that. And Ireland?

Ectobius panzeri, Steph. seems to be found on sandhills around the coast from Suffolk via Kent to Cornwall, but as it is also in Anglesea, it clearly should be looked for around the Welsh coast, and it very likely occurs up the east coast too.

Are there *no* wild cockroaches in Ireland?

Caught by sweeping and beating in late summer and autumn.

Gryllidae.

Liogryllus campestris, L. is recorded from scattered localities. The north Scottish records require verification. Is it in Ireland? Is it as rare as believed?

Nemobius sylvestris, Fabr. is common in the New Forest and Parkhurst. It is in Dorset, and vaguely reported from Cornwall. Verification and extension wanted, but above all, of a record from Derbyshire. It should be looked for in May in leafy banks and clearings in woodlands, especially in such parts of our ancient forest that have survived.

Gryllotalpa gryllotalpa, L. has an erratic record with us from Cornwall to Renfrewshire and Lough Neagh. There are so many gaps to fill in.

Adult in spring.

Acridiidae.

Adult from late July to September, except *Acrydium*, which is adult in early summer.

Mecostethus grossus, L. is recorded from bogs from scattered localities, but probably occurs in very many more. Is it true that the draining of the fens has exterminated it in Cambridgeshire? It is associated with *C. dorsalis* and *M. brachyptera*. I have no records north of the Severn-Wash line, but plenty in Ireland, especially the west.

Gomphocerus rufus, L. is known only from the southern counties and not all of those. Its range is probably a good deal wider, and into Wales and Ireland. I can trace no records from Wilts, Somerset, north Hants and east Sussex. I have taken it in northern Siberia.

Stenobothrus lineatus, Panz., so typical of high turf on limestone, has not been noted by me north of the Severn-Wash line, and scarcely above the Severn-Thames line; no records from Somerset and Wilts.

Omocestus viridulus, L., perhaps our commonest grasshopper, has not been fully reported. No records from eleven English counties, and not recorded from about half Ireland, Wales and Scotland. It is probably everywhere.

O. ventralis, Zett., *i.e.*, *rufipes*, Zett. I have notes from all counties south of the Severn-Thames line except, as usual Wilts, and from some in Anglia and a few in the north and only one from North Wales. Is it not in Scotland and Ireland?

Myrmeleotettix maculatus, Thunb. My maps look like a chess board. About half our counties still without records of this pretty little sandy-heath-loving grasshopper. Plenty of notes from Scotland, Wales and Ireland, but few from the Midlands, and white gaps everywhere, including Wilts.

Uvaro has found, in the British collection in the Natural History Museum, a specimen of *Chorthippus vagans*, Fieber, but with no indication of locality. This may have found its way there by chance, but it is quite likely a native species with us. A sharp look-out should be kept for it. It looks very like *Ch. bicolor*, but the hind border of the pronotum is rounded, and the cross sulcus of the pronotum is nearer to the hind border than to the fore border.

Chorthippus bicolor, Charp. It is ridiculous that of this universal grasshopper we have no records from eight English counties, including

as usual Somerset and Wilts. Scotland is very patchy, Wales too, and Ireland still more so. What is its northern limit ?

Ch. albomarginatus, De Geer., judging from my maps, is eastern and southern. I have no records from Devon, Somerset and Wilts, nor from the Midlands, the north of England, Scotland or Ireland and hardly any from Wales. It is characteristic of dry and scanty grass, but also found on wet grass.

Ch. paralellus. Zett., is probably universal, as I have notes from Land's End to John o' Groats, but with plenty of white spots to shame us, one, a big one, right in the middle of England. And none from Ireland !

Oedipoda caerulescens, L. This beautiful insect is on our list on the strength of a single specimen from the Scilly Island, which is not extant. *Verb. sat. sap.*

Acrydium subulatum, L. This wet-loving species has a very chequered map, and it looks as though it does not go beyond the Severn-Wash line, which I cannot believe. One from Ireland: Somerset and Wilts are blank of course.

Ac. bipunctatum, L. Out of the confusion of synonymy the Swedes have shown that what Linnaeus described was the northern form, found in northern, but not central, Sweden, in which the antennal segments are clearly very short, knotty. I know of two from Abernethy in Perth, but all the other specimens from Scotland, even farther north, that friends have sent me so far are the following species. Work is urgently wanted here.

A. vittatum, Zett., seems to be the name which we have got to use for what we have called *bipunctatum* for so many years, and recently *kiefferi*, Saulcy. But there can be no doubt that it was this species that Zetterstedt had a generation before de Saulcy. It is probably universal in the British Islands, as I have notes from Land's End to John o' Groats, but there is a big white spot in the midland counties, and of course, in Somerset and Wilts. Only a few localities from Wales and Ireland.

To be noted, that this genus is adult in spring and early summer.

Tettigoniidae.

I am sure that *Phaneroptera falcata*, Scop. is a true British insect, that requires confirmation. Both our records are from the end of Cornwall. No doubt it is also in south-west Ireland.

Leptophyes punctatissima, Bosca. is widely recorded from the south, west and east of England, but there is a big gap in the middle to fill in, and it has not been noted from the north. It is probably fairly widely spread in Ireland and the Lowlands of Scotland. I can find no records from Somerset, otherwise the southern part of England is complete. Wales wants working.

Meconema thalassinum, Fabr. has been recorded from all counties south of a line from the estuary of the Severn to the Wash except Wiltshire, where of course it occurs, and Bedford and Hunts. Wales is blank, barring Glamorgan. Our northern counties are very shaky, and Scotland still more so. I feel sure it is in the Lowlands.

Tettigonia viridissima, L. is widely distributed, as it is recorded from Northumberland and Cumberland, so I see no need to question Don's

record from Forfar. Otherwise, there are hardly any records north of the Severn-Wash line, and none from Ireland.

Pholidoptera cinerea, L., according to the map, is missing from Ireland and Scotland, which I can hardly believe. I have no records north of the Humber, or from the Midlands, or Wales. I expect it ranges into Scotland.

Decticus verrucivorus, L. is a northern species in Europe and Siberia, so why have we records only from south Hants and east Kent?

Platycleis grisea, Fabr., is characteristic of our south coast from Essex to Cornwall. It is probably in South Wales and southern Ireland. The record from Derby is therefore surprising. Lucas states that the specimens are now in the Derby Museum. The identification should be verified.

Metrioptera brachyptera, L., has a scattered distribution with us, mostly from the south, but it is also in Cumberland, and I see no reason why it should not be in Scotland, Wales and Ireland. It is found in bogs, and I am sure only needs looking for.

M. roeselii, Hagenb., has a curious distribution with us, as it seems confined to a strip along the east coast, from Herne Bay to the Humber. All records are from the coast itself, except a doubtful one "perhaps from Cambridgeshire." Does it *never* go further than a mile inland? [Benfleet, Thames Marshes; teste Dr. K. G. Blair.—Hy.J.T.]

Conocephalus dorsalis, Latr., is characteristic of rushes in our eastern and southern counties, but records are wanting from Cornwall. It is probably found in the southerly Midlands, and South Wales and Ireland.

In varied situations, on trees, shrubs, herbage, rushes, but seldom on grass; adult from late July to late September.

NOTES ON COLLECTING, etc.

Micro Collecting—Mid April to Mid May.—The larvae of *Tortrix forsterana* feeds between two leaves of ivy spun flat together. The feeding places are conspicuous by April and are easily found. *Eucosma pygmalena* is well out towards the end of April. The imago flies freely for a short time about midday in sunny weather around spruce trees, rather high up. At other times and in dull weather it can be beaten out, when it drops rather than flies to the ground.

The imagines of *Laspeyresia scopariana* can be found amongst *Genista tinctoria* making short flights over the herbage for about two hours at mid-day, when the sun is out. It is not easily seen and is probably often overlooked. During the first week of May the aborted shoots of Pine should be collected for pupae of *Evetria posticana*, *E. turionana* and *E. pinivorana*. The last half of April is the best time to search for the cases of *Nemotois fasciella* (*schiffermüllerella*) before the plants of *Ballota nigra*, on which the larvae feed, grow too high. This species is very local. Out of a number of plants in a district only a few will produce cases, up to 4 or 7, but I have found as many as 40 on a single plant. The larvae seem to prefer the dead leaves on the ground, but also eat the lower leaves, dropping off at the slightest touch. The curious flat figure of 8-shaped cases harmonize well with the loose rubbish and soil around the rootstocks of the plants, amongst which the cases will be found. It is better to leave the smaller cases, which